

ABSTRACT OF THE DISCLOSURE

A producing method of a porous Si_3N_4 having high porosity and formed of Si_3N_4 particles having a high aspect ratio includes the following steps. A compound of a rare earth element as a first sintering agent is
5 mixed in an amount of 7.5-45 parts by mass, in terms of an oxide of the element, with respect to 100 parts by mass of Si powder to obtain mixed powder. A binder is added to the mixed powder, which is then molded into a molded body. The molded body is heated in a nitrogen atmosphere to
300-500°C to remove the binder. The binder-removed body is heated in a
10 nitrogen atmosphere to 1350-1500°C for nitriding. The nitrified body is then sintered at 1750-1900°C at a nitrogen pressure of 0.1-1 atmosphere.